

Remarks

The claims now in this case are 1-55, 58, 63-70 and 80. Claim 80 is new. The remaining pending claims are amended or as originally presented. Claims 56-57, 59-62 and 71-79 are cancelled.

An Information Disclosure Statement is submitted with this response. The examiner's attention is solicited, but it is believed that the claims are patentable over the cited art.

Restriction Requirements

In the PTO Action mailed June 24, 2004 the Office levied a restriction requirement among 4 groups of inventions. Applicants elected the first group invention, and provisionally elected the subgenus of claim 48 and compound 149.

In the Action mailed January 11, 2005, the examiner required further restriction among 6 additional groups. Since compound 149 fell within Group I, the claims of Groups II-VI were withdrawn from further examination.

Group I is drawn to inventions in which $Y=Z$ is $C(R^2)=C(R^3)$, A^1 is $C(R^2)_2$, A^2 is $C(R^2)=C(R^3)$, and Q is CR^4 .

Applicants respectfully request reconsideration of the restriction requirements levied heretofore. It is believed that certain minor adjustments in the scope of the restriction are in order. Groups I-VI are organized around the various alternative tricyclic nuclei provided by this invention. The tricyclic nucleus of Group I is characterized by A^1 as a single ring carbon, $Y=Z$ and A^2 each having 2 ring carbons, and Q being CR^4 . Applicants concede the restriction as far as it applies to Q and the $Y=Z$ option. However, a number of A^1 alternatives other than $C(R^2)_2$ have the same nucleus but differ only in the substituent found on the single ring carbon. For example, A^1 also can be $C(=O)$ or $C(=S)$ as well as having other substituent groups, none of which are believed to exhibit sufficient distinctiveness to warrant restriction.

Similarly, the A2 alternatives $C(R^2)-C(R^3)$ and $C(=O)C(R^3)_2$ are not believed to be sufficiently distinct from $C(R^2)=C(R^3)$ to warrant restriction. Accordingly, applicants believe that all 3 2-carbon ring alternatives should be examined in this case. The examiner is requested to reconsider the restriction requirement insofar as a limited additional series of A^1 and A^2 groups is concerned.

In the event the compound claims are found allowable, the examiner is respectfully requested to consider rejoinder of claims 64-67 and 69-70. Claims 64-67 are directed to the compounds of this invention in combination of other therapeutic agents for treatment of the same disorder. In this respect they must be patentable if the compound of this invention is patentable, and accordingly no further search or consideration need to be given to them. By the same token, claims 69-70 are directed to methods of therapy using the compounds herein, and if the compounds are patentable so must the methods of their use.

Basis for Amendments to the Claims

A number of amendments are made to place the claims into compliance with the restriction requirement. Others are voluntary and are described below:

The specification has two definitions for Ar, but only one (now designated by subparagraph (a)) was found in the claims as filed. The other (now paragraph (b)) is based at least on specification page 18, lines 11-12. It should be noted that the unsaturated ring systems referred to in the added definition are partially unsaturated (by inference) because otherwise the term would be redundant over the aromatic ring/system alternative.

R^1 also is described differently at several locations. The original R^1 definition in claim 1 did not contain certain R^1 alternatives found in original claims 26 and 50. These additional alternatives have been added to R^1 in amended claim 1 et seq.

Claim 1 now contains an express recitation of tautomers (based at least on specification page 5, line 17).

The dependent claims have been amended to place them into conformance with the main claim, e.g., subgenera and compounds falling outside the elected invention have been deleted.

The claim 5 R¹ list is based at least on original claims 26 and 50.

The claim 7 amendment is based at least on original claim 49's list of protecting groups.

The examiner should note that the language in the Ar definition "C2-C20 substituted heteroaryl" for example means substituted C2-C20 heteroaryl. The substituents are defined on specification page 17, line 26-page 18, line 9. In view of this definition Applicants do not believe it is necessary to recite the substituents in the claims, but if the examiner would prefer applicants will make an appropriate amendment.

Corresponding Specification Amendment

The amended claim 1 language has been substituted for specification page 3, lines 22-29 through page 4 lines 1-29 in order to provide literal basis for the amended claim. Substitute pages 3-4 are submitted herewith.

Rejection under 35 U.S.C.112

The pending claims were rejected under 35 U.S.C. 112(2) on a number of grounds, all of which are believed to be moot in view of the claim amendments and/or comments to follow. Taking the grounds up in the order used by the examiner:

(a1). The number and type of heteroatoms are fully defined in the specification page 11, lines 29-34 and page 12, line 6. Again, should the examiner feel it necessary applicants will introduce an amendment to the claims.

(a2). The term “pharmaceutically acceptable” prodrug has been removed from the claims. Some prodrug moieties are useful as intermediates in the preparation of final products, and therefore they need not be pharmaceutically acceptable.

(b)-(h). The inappropriate “comprising” language has been removed from the claims.

(i)-(n). The various substituents the examiner refers to cannot be practically inserted into the parental claims because the substructures to which they refer are not found in any parental claim. For example in claim 35 the antecedent basis in claim 1 is “prodrug moiety.” The R⁵, R⁶ and R⁷ substituents are then introduced for the first time into claim 35 in connection with individual speciation of the prodrug moiety. It would be awkward at best to insert the R⁵-R⁷ substituents in claim 1 because the two formula in claim 35 to which R⁵-R⁷ refer are absent from claim 1.

(o). The term “improved” has been removed from claim 54.

The claims are now believed to be in compliance with section 112(2). The examiner is respectfully requested to reconsider and withdraw the rejections.

Double Patenting

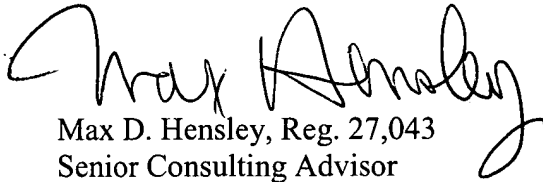
Claims 21-23, 25, 45, 47-51 and 53 were provisionally rejected under 35 U.S.C. 101 as claiming the same invention as USSN 10/687,374, and claims 1, 2, 5, 6, 8, 9, 12-20, 26-44, 54-63 and 68 were provisionally rejected under 35 U.S.C. 101 on the ground of obviousness-type double patenting. Applicants note this provisional rejection and will take appropriate steps in due course.

Conclusion

Applicants gratefully acknowledge the examiner’s observation that motivation would have been absent for one to modify the Murray et al. or Chalmers compounds to arrive at compounds of the

invention. Accordingly, in view of the foregoing observations and amendments the claims are now believed to be in condition for allowance. An early Notice to that effect is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Max D. Hensley". The signature is fluid and cursive, with the first name "Max" being more prominent.

Max D. Hensley, Reg. 27,043
Senior Consulting Advisor

Date: 6/21/2005